I Claim

1. In a third generation mobile telecommunications network, a method of delivering packets in layer 2 to a mobile node in a foreign network comprises the steps of:

providing an Address Resolution Protocol (ARP) entity;

setting up a home agent in a home network of the mobile node;

allocating a Care of Address to the mobile node; and

setting up a Dynamic Host Configuration Protocol (DHCP);

setting up a proxy ARP entity; and

informing the proxy ARP entity of the Care of Address and the Media Access Control address of the mobile node.

2. A method according to Claim 1 in which packets are transmitted from the correspondent node to the mobile node and the Care of Address is a Collocated Care of Address comprising the further steps of:

a last routing switch in the foreign network broadcasting an ARP request;

the proxy ARP responding with an ARP reply message containing the MAC address of the mobile node;

the last routing switch updating its ARP cache table by adding a unique mapping between the Care of Address and the MAC address of the mobile node; and

the last routing switch delivering the packet to said MAC address.

3. A method according to Claim 2 in which the ARP request from said last routing switch has the frame format:

Sender's MAC; Sender's IP address; MN's MAC (NULL); MN's COA; and the ARP reply from the proxy ARP server has the frame format:

MN's MAC; MN's COA; Sender's MAC; Sender's IP Address.

4. A method according to Claim 1 in which packets are transmitted from the mobile node to the correspondent node comprising the further steps of the ARP entity checking whether the destination of the packets is a node in the home network of the mobile node, and if so, the mobile node sending an ARP request using its own home IP address as the sender's address; and the

proxy ARP responding with a ARP reply addressed to the MN's IP address.

5. A method according to Claim 4 in which the ARP request from the MN has the frame format:-

MN's MAC; MN's Home IP Address; CN's MAC (NULL); CN's IP address; and the ARP reply from the proxy ARP server has the frame format:-

FN Default Gateway's MAC; CN's IP Address; MN's MAC; MN's IP address.

6. A method according to Claim 4 in which the destination of the packets is a node which is not in the home network of the mobile node, comprising the further steps of:

the mobile node sending an ARP request using the MAC address of a Default Gateway in the foreign network as the sender's address;

the Default Gateway receiving the ARP request and broadcasting it; and

the proxy ARP responding by sending an ARP reply to the MN.

7. A method according to Claim 6 in which the ARP request from the MN has the frame format:-

MN's MAC; MN's Home IP Address; HN's Default Gateway (NULL); HN's Default Gateway's IP address;

and the ARP reply from the proxy ARP server has the frame format:-

FN Default Gateway's MAC; HN Default Gateway's IP Address; MN's MAC; MN's Home IP Address.